ARI Newsletter

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Commitment in the Army

The Army needs committed soldiers and families. This is something we hear all the time, but what does it mean to be a committed soldier or spouse? Committed to what? And why do we want committed soldiers and spouses?

Generally when we say we want a committed soldier, we mean a soldier who is strongly attached to the Army as an organization and to his or her unit as part of that organization. We want committed soldiers and families because we expect committed soldiers and spouses to perform their work better, be more likely to stay in the Army, and be good citizens of their organizations.

Commitment can take many forms, for example, commitment to another person, such as the commitment of a husband to a wife or a parent to a child. We need to separate these kinds of commitments from the commitment that people make to organizations.

How, then, do we define organizational commitment? Can we measure the amount of commitment people have to organizations? Can we determine the effect that organizational commitment has on performance and retention? Behavioral scientists John Meyer and Natalie Allen have been studying these and other questions about organizational commitment for more than a decade. They have found that organizational commitment can be measured reliably using scaled items in a questionnaire, and they have shown that such measures can be related to important outcomes, such as performance and retention, in civilian organizations. During the last five years, ARI has been studying organizational commitment in the Army and Special Opera-

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From the Director

Applied research focuses on problem solving. Good applied research provides new options for solving a real problem, while being good science. In other words, our bottom line is whether our research results in a product that improves the effectiveness of the Army. But, improving effectiveness requires utilization of research products. Utilization is not only an issue of doing the right research and translating the research findings into an operational product, but also forming a partnership with the proponent to use the research product. While the researcher needs to think utilization at each stage of the research, the proponent needs to work with the researchers to ensure the match between the research and the requirement. Good applied research and utilization is a partnership in which both the researcher and the proponent are critical to success.

At the end of each article in this newsletter we provide a point of contact for the research described in the article. I invite our readers, the proponents and users of our research, to provide feedback to the researchers listed to improve the match between the research and their needs. Successful applied research requires the active participation of both researcher and the user.

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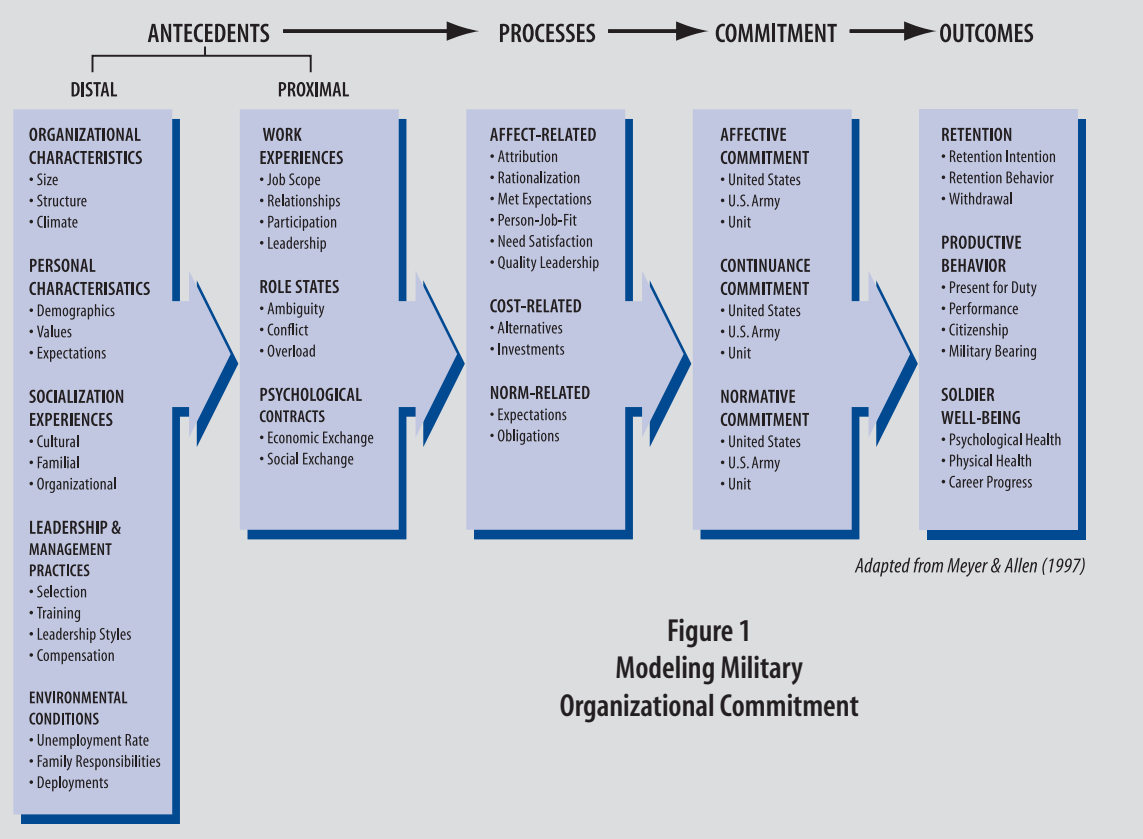

Adapted from Meyer & Allen (1997)

Figure 1
Modeling Military Organizational Commitment

Commitment in the Army

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tions Forces using Meyer and Allen's concepts and scales.

What is Organizational Commitment?

Figure 1 shows how we have adapted Meyer and Allen's conceptualization of organizational commitment in civilian organizations for use in military organizations. Meyer and Allen define organizational commitment as a combination of three component processes: affective commitment, continuance commitment, and normative commitment. Affective commitment is the *want to* of commitment. It represents a soldier's or a spouse's emotional attachment to, or identification with, the Army or the unit. Continuance commitment is the *need to* aspect of commitment. For example, a soldier or spouse feels the need to continue in the Army because it would be hard to find another job or because he or she has too many years invested in the Army to leave it behind. Normative commitment is the *ought to* of commitment. This represents a soldier's or a spouse's felt obligation to remain with the organization; the soldier or spouse may see the Army as a moral obligation or "calling," not merely a job. In summary, organizational commitment can be viewed as a composite measure of various types of motives to remain with and perform for an organization.

Our research has focused on affective and continuance commitment, excluding normative commitment. We did this because current measures differentiate affective from continuance commitment very well, but normative commitment overlaps considerably with affective commitment, making it difficult to distinguish from affective commitment even with sophisticated statistical techniques.

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How Do We Measure Military Organizational Commitment?

Measuring affective and continuance commitment reliably, with as few items as possible, has been the focus of our organizational commitment research at ARI. Efficiently measuring organizational commitment in Army questionnaires, where space is at a premium, was our primary goal. We began by administering Meyer and Allen's eight-item affective and eight-item continuance commitment scales to Active Component and Reserve Component (mostly National Guard) soldiers serving in the Multinational Force and Observers (MFO) 28th peacekeeping battalion rotation to the Sinai. These soldiers began their training in the fall of 1994, deployed to the Sinai in January 1995, and returned from the deployment in July 1995. The first measures of commitment were administered to the MFO soldiers during their training in the fall of 1994.

By using factor analysis statistics on the results of the fall survey, we were able to reduce each of the commitment scales to four items while maintaining our ability to measure both affective and continuance commitment accurately. After the soldiers returned from the deployment, we administered the shorter scales in a January 1997 telephone survey with soldiers and their spouses or fiancées.

What Do We Know about Military Organizational Commitment and Performance?

What did we find out with all this surveying? Meyer and Allen's theory of commitment predicted that the influence of affective and continuance commitment on performance would be quite different; affective commitment positively influencing it and continuance commitment diminishing it. The best performance should come from those who have a strong emotional attachment to the Army and who do not feel they are trapped into staying in the Army; in other words, those who have high affective commitment and low continuance commitment. Conversely, the worst performance should be found in those who have low affective commitment and high continuance commitment. This is exactly what we found when we divided soldiers into groups according to whether they scored high or low on each commitment scale in the fall of 1994. As figures 2 and 3 show, soldiers who had high affective commitment and low continuance commitment had the best MFO specific job skills as well as general soldiering skills tests scores when we measured them in May 1995. Also as predicted, those who had high continuance commitment and low affective commitment had the worst test scores. Although we need to measure organizational commitment in a variety of performance settings and with a variety of soldiers to see how general these results are, our findings are important because they show that we must measure both affective and continuance commitment to understand the performance influence of organizational commitment. These results also show that knowing a person's level of organizational commitment

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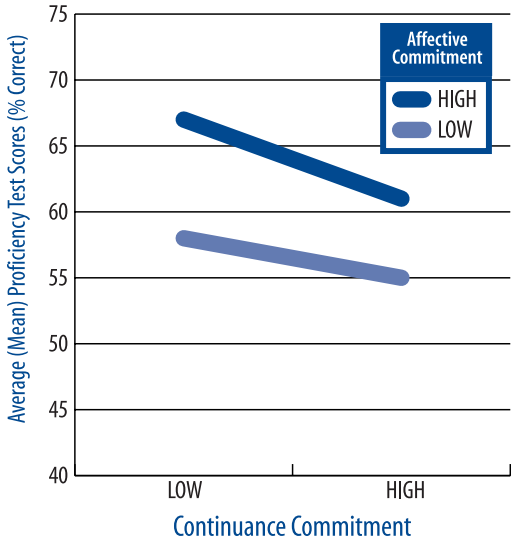
Figure 2
MFO Specific Skills & Commitment



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today can help predict that person's future performance.

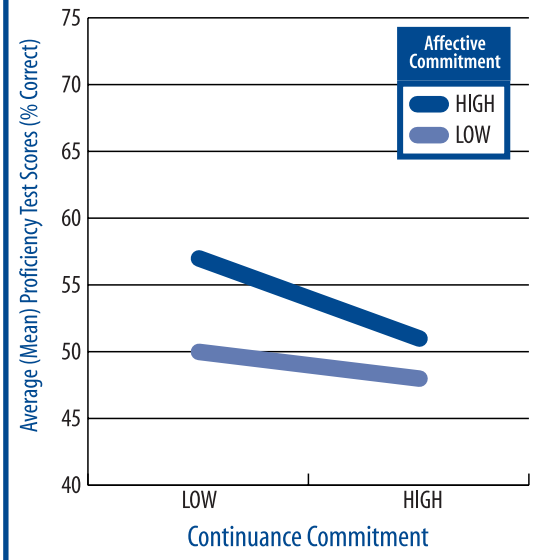
Is Commitment to One's Branch Different from Military Commitment?

Although Meyer and Allen's theory of organizational commitment suggests that affective commitment may vary by level of the organization, very little information has been collected about that from either civilian or military communities. In 1997, ARI surveyed nearly 6,000 Special Operations personnel from the Army, Navy, and Air Force in a study of PERSTEMPO for the U.S. Special Operations Command. Among other things, we asked these service members about their affective commitment to Special Operations as well as their affective commitment to the military in general. We also asked about their continuance commitment to the military but not their continuance commitment to Special Operations. When we factor analyzed our results, we found two separate affective commitment factors: one for Special Operations and one for the military. The third factor we found was for continuance commitment. Our results also showed that affective commitment to Special Operations was about twice as strong as affective commitment to the military in general. This indicates that we need to need to know commitment to levels of the organization when we measure commitment and its effect on retention and performance.

What about Spouse Organizational Commitment?

Because we surveyed spouses as well as soldiers after the MFO rotation and because we knew from previous ARI family research that spouse attitudes influence retention, we thought measuring organizational commitment in spouses would be useful if it could be done. We found that it was fairly easy to adapt the shorter measures we had used for MFO soldier commitment to measure spouse commitment in a January 1997 telephone survey. Spouses showed the same breakout of affective and

Figure 3
Soldiering Skills & Commitment



continuance commitment we had been able to measure in soldiers. We found that spouses and soldiers with high affective commitment rated the MFO deployment experience more positively. Continuance commitment, on the other hand, appeared to have no relationship to how these spouses and soldiers viewed their MFO deployment. Although we found that soldier affective and continuance commitment was correlated with spouse affective and continuance commitment, the relationship was not particularly strong, indicating that soldiers and spouses may not always agree on their commitment to the Army. We cannot tell from these data whether affective commitment colored how soldiers and spouses felt about the deployment or whether their deployment experiences influenced their level of affective commitment. However, these results did show that spouse organizational commitment can be measured in questionnaires or interviews using scales similar to those for soldiers, and that organizational commitment can be related to important outcomes for both.

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Where Do We Go from Here?

ARI will continue to assess the ability of these forms of organizational commitment to predict retention and performance, particularly as it relates to the role of the leader. For example, does leader organizational commitment affect the organizational commitment of subordinates? If so, how do leaders influence subordinate organizational commitment?

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Leadership Development: A Review of Industry Best Practices

What do you do when you are successful but still want to improve? Do what the U.S. Army did and identify the best practices that the everyday business world uses to develop leaders. ARI worked with the Center for Army Leadership and the Deputy Commandant of the Command and General Staff College, to identify leadership development best practices. ARI enlisted Dr. David Day of Pennsylvania State University to conduct a review of industry's acknowledged pacesetters in executive and managerial development. Information was gathered from business periodicals, human resource-oriented periodicals, and recent books on leadership development. In a forthcoming ARI report, the most popular practices in leadership development are gleaned from these sources, evaluation issues are discussed, profiles are provided on five best-practice organizations, and a summary is given of overall best-practice principles.

Best Practices

- **Concentrate on a few LD practices**
- **Integrate practices into company culture**
- **Implement consistently**
- **Link to status and promotion**
- **Implement through an influential champion**

Best Practices in Leadership Development

The most common and most easily implemented leadership development practices are not necessarily the best. Best-practice companies conduct a systematic approach to leadership development that spans levels and function. The practices reviewed in the report are formal development programs (which often include a number of other specific practices), 360 degree feedback (multi-source rating of performance), executive coaching (focused one-on-one learning), job assignments (to challenge or stretch an individual's leadership capabilities), mentoring (longer-term developmental relationships), networks (connecting to others across the organization's internal boundaries), reflection (making sense of experience), action learning (project-based work to enhance learning in the contest of business imperatives), and outdoor challenges (team-building exercises in outdoor or wilderness settings).

Many leadership development initiatives combine two or more of the above practices. The best practice organizations find ways to integrate these various techniques of leadership

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Leadership Development

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development into the unique culture and needs of their company. Effective leadership development is a function of the interdependence of the various practices rather than a collection of independent programs. Implementation is critical. The practices that are adopted matter less than implementing them consistently and linking them to status and promotion.

How you Judge Success

Best-practice organizations attempt to assess the impact of leadership development; but most of these efforts are informal. Employee satisfaction surveys, as well as participants' reactions to development programs, are the most frequently cited procedures for evaluating programs. Relatively few companies have documented significant improvements in either individuals' skills or behaviors, or in organizational profitability, associated with leadership development. Two efforts demonstrated substantial financial returns on investment. The exceptions are especially noteworthy efforts because return on investment is a persuasive evaluation criterion. The ability to document financial impact is directly associated with the credibility and influence of a leadership development system.

Best Practice Organizations

A closer look was given to five organizations that are popularly recognized for their leadership development practices: General Electric, Motorola, PepsiCo, Federal Express, and Johnson & Johnson. Background is provided on each organization's philosophy, values, and mission, as well as information on how various leadership development practices are implemented and integrated. These examples illustrate how development is aligned with organizational culture and strategy, and how best-practice organizations address development concerns systemically across levels and functions.

General Electric. His peers have named GE's chief executive officer, Jack Welch, the most-admired CEO in three out of four recent years. Welch's commitment to leadership development is almost legendary. Two of Welch's most high-profile initiatives are the workout strategy and the Change Acceleration Process, which are both mixtures of culture change, leadership development, and action learning projects.

Motorola. Motorola's commitment to education and development is embodied in the Motorola University (MU). Among its many contributions, MU has pioneered the Six Sigma approach to quality, which builds leadership through doing and sharing with others. Another development program of interest is the Vice President Institute, which is designed to foster leadership in new vice presidents. In particular, leadership development is tied to the business imperative of how to sustain growth in a fast growing corporation.

PepsiCo. CEO and Chairman Roger Enrico spearheaded the leadership development initiative at PepsiCo. Enrico spends more than 100 days a year personally conducting leadership workshops for senior executives. The central program philosophy is simple but powerful: The most important responsibility of a leader is to personally develop other leaders. Enrico has championed this viewpoint and uses the time with program participants to help socialize key leadership values, share perspective on his own personal philosophy of leadership, and to serve as a personal coach for participants. Development at PepsiCo is tied to action projects that stem from a "big idea" that has the potential to affect revenue, quality, cost, or customer satisfaction in a substantial way.

Federal Express (FedEx). FedEx advocates a basic philosophy of people-service-profits (PSP). Put simply, leaders at all levels are expected to nurture a people-first culture. Distinctive features of the FedEx approach include comprehensive, system-wide leadership development initiatives that socialize managers to the PSP philosophy, and processes

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that link selection with development. An especially interesting aspect of the FedEx approach to leadership development is the use of management Preceptors (i.e. instructors). FedEx Preceptors are carefully chosen for the 24-30 month assignment, with primary responsibilities of developing, designing, and facilitating courses at their Leadership Institute. The Preceptor program provides the opportunity for other FedEx managers to learn from these "high-potential" individuals. The approach also allows the Preceptors to pursue their own self-development by freeing them from daily management tasks. Thus, the Preceptor system fosters a two-way educational experience and helps to build leadership capacity throughout the FedEx system.

Johnson & Johnson (J&J). The Johnson & Johnson Credo serves as a moral compass for the company. The Credo is a one-page document outlining the corporation's responsibility to customers, employees, the community, and stockholders. Managers are urged to apply it as part of their everyday business process, which by all accounts has been very effective. As a means of building leadership capacity to meet these growth expectations, J&J decided to reinvent its approach to leadership development. The shared emphasis on the foundational values represented in the Credo is a distinctive feature of the J&J approach to leadership development. It is a prime example of how to use a leadership development system to socialize managers in key corporate values and its future vision.

Best Practice Principles

From these commonly used practices and case study examples, several general principles regarding leadership development are summarized. The presence of an influential champion (preferably the CEO) is the most important principle in successful leadership development efforts. Effective leadership development practices also are tied to specific business imperatives. Perhaps the most meaningful principle, however, is that successful leadership development depends more on consistent implementation than on the use of innovative practices. The Army can adapt these principles to education, training and developmental assignments. The growing emphasis on leadership and leadership development in the business world can have payoffs for the Army when embedded with the military value system and dedicated to the Army's imperatives. Leadership development is an investment in the future and it is important to recognize that it may take years before dividends are realized.

For further information, please contact Dr. Stanley M. Halpin, U.S. Army Research Institute, Fort Leavenworth Research Unit, Fort Leavenworth, Kansas. DSN 552-9758 or Commercial (913) 684-9758. E-mail: halpins@leav-emh1.army.mil

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A Trial Program for Selecting Company Commanders

Background

The mission of the Infantry Training Brigade (ITB), Fort Benning, Georgia, is to provide high quality training for new Infantry soldiers. In 14 weeks, new recruits are transformed into functional Infantry soldiers capable of performing the basic skills needed to support the Infantry mission. The "soldierization" process is designed to produce highly motivated, disciplined, physically fit Infantrymen ready to assume their duties at Army posts throughout the world. The curriculum includes rifle marksmanship, intense physical training, combat and survival skills, drill and ceremony, and training in Army values.

Each of ITB's five battalions contains five companies and it is there, at company level, that day-to-day training occurs. The job of the ITB company commander is to manage all aspects of the program of instruction. He schedules and coordinates training events and leads and supervises his cadre of drill sergeants. Managing the "soldierization" process is a round-the-clock job, and one that is vital to the basic foundation of the Army. Quality training is dependent on the performance of the company commander.

The Problem

Because the Army is experiencing a shortage of captains, it has been difficult to find qualified captains to fill the company command positions at ITB. Given the importance of this position, what can be done to assure that highly motivated, career-oriented captains are placed into this critical job?

The Commanding General, U.S. Army Infantry School (USAIS), recently implemented a trial program in which select senior first lieutenants and junior captains are assigned to ITB company command prior to completing the Infantry Captain's Career Course (ICCC). The ICCC was previously named the Infantry Officers Advanced Course (IOAC). Ordinarily, officers must complete ICCC before assuming company command. The trial program represents a departure from this policy, and required a Department of the Army waiver before being implemented.

Pugil stick training is designed to build confidence and enhance the Warfighter spirit.

High-performing junior officers who have not yet taken ICCC are nominated by senior Infantry commanders to participate. The commanders are asked to select the "future colonels and generals of the Army" and to encourage them to volunteer. Prior to acceptance, the ITB Brigade Commander interviews the prospective company commanders. Officers selected for the program are given command of an ITB company for 11 months, and promised a second command in a Table of Organization and Equipment (TO&E) unit. Limiting the assignment to 11 months keeps them from being branch qualified, which helps ensure the second command. In contrast, ITB company commanders who assume command after completing ICCC serve an 18-month command tour. The combination of careful selection, screening, and the incentive of a second company command are designed to

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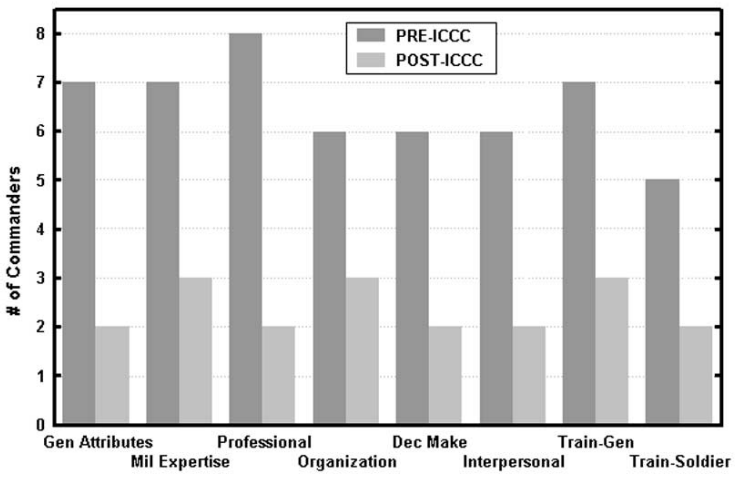
ensure that the most promising junior officers are selected for this program.

The Evaluation Plan

The Commanding General, USAIS, asked the Infantry Forces Research Unit to evaluate the success of the trial program. Phase I compared the job performance, leadership, and organizational skills of company commanders in the trial program, or Pre-ICCC commanders, with those of company commanders who assumed command following completion of ICCC, or Post-ICCC commanders.

To ensure valid ratings, all commanders selected for this evaluation had been in command for a minimum of eight months. Eight Pre-ICCC commanders met this criterion and were matched with eight Post-ICCC commanders. Each commander was interviewed. Also, a survey assessing each commander's skills and job performance was given to the company commander's battalion commander, battalion command sergeants major, and eight drill sergeants. The combination of interviews and ratings was designed to provide a comprehensive picture of each commander's overall performance

Figure 1: Number of Pre-ICCC and Post-ICCC commanders receiving "top" ratings on eight leadership subscales



Upon completion of Phase I, the USAIS command group raised several specific concerns. Phase II was added to specifically look at (1) the ability of the Pre-ICCC company commanders to manage training and (2) possible negative effects resulting from the relatively short command tour of the Pre-ICCC commanders.

In Phase II the battalion commanders were interviewed, and a survey assessing the role of the company commander in training and the impact of the more frequent change of company commanders on training and related duties was administered to 60 experienced drill sergeants.

Findings

Phase I results showed Pre-ICCC commanders were rated higher on overall job performance and as taking less time to become proficient in their jobs than Post-ICCC commanders. Impressively, more Pre-ICCC commanders received "top" ratings in all eight leadership and training management areas: military expertise, professionalism, organizational skills, decision-making, interpersonal skills, general training skills, training/interacting with soldiers, and general leadership attributes. These ratings are shown in Figure 1.

Battalion commanders viewed Pre-ICCC company commanders as extremely enthusiastic and motivated, and possessing excellent interpersonal and leadership skills. Interviews with the Pre-ICCC commanders supported these observations and showed them to be very accepting and supportive of the trial program. Comments of Pre-ICCC commanders included:

- I recognize that the product coming out (of ITB) is unfinished. When you get new soldiers in the unit, put them immediately with good soldiers to serve as mentors

- I have a better idea of how NCOs can train soldiers . . . have seen NCOs teach soldiers from knowing nothing to being

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strong Infantrymen with basic knowledge

- I know where the new soldiers come from and what I can expect from them

In Phase II, battalion commanders were very supportive of the program. They felt that Pre-ICCC commanders learned their jobs quickly and that their high motivation and enthusiasm compensated for their initial lack of experience. Battalion commanders also indicated that turbulence effects could be controlled through various management and leadership techniques. Survey results from drill sergeants showed that changes in company commander had relatively small impact on the day-to-day training of soldiers. Comments of battalion commanders about the Pre-ICCC commanders included:

- I have been overwhelmingly satisfied with the program
- I know I will get a great performer
- Pre-ICCC commanders are the cream of the crop

Conclusion

The trial program demonstrates the ability of the Army to effectively cope with a serious personnel challenge. The results show that carefully selected, high-performing junior officers can achieve success in company command prior to taking ICCC. This provides a model for one solution to fill critical jobs in the face of the captain shortage.

The program represents a win-win situation for the Pre-ICCC commanders and the Army. The commanders benefit from the invaluable experience of early command, and acquire skills to make them more competent in future assignments. The Army benefits by addressing a critical personnel shortage in an effective manner and by helping ensure that a number of future leaders have command experience, and therefore a better understanding, of the training base.

For more information on the results of this evaluation, contact: Dr. Michael D. Matthews Army Research Institute, Infantry Forces Research Unit, Fort Benning, GA 31905 DSN 835-2198/5589

Did you know that…

PC and Internet Usage

- 96.3% of all officers have access to a personal computer (PC) or the Internet?
- 72.7% of all enlisted personnel (PV2-CSM) have access to a personal computer (PC) or the Internet? Note: The number of enlisted personnel who have access to a PC/Internet has increased approximately 10% from spring 1996 to fall 1998 (53.9% to 62.9%) and another 10% to 72.7% in spring 1999.
- of those who have access to the Internet…
  - 85.3% of officers and 69.7% of enlisted personnel agree that they "would miss online access if it were no longer available"?
  - 84.5% of officers and 74.7% of enlisted personnel "have recommended friends/relatives to go online"?
  - 63.2% of officers and 48.0% of enlisted personnel agree that "being online/Internet has made my life [their lives] better"?
  - 54.7% of officers and 38.4% of enlisted personnel agree that "using an online/Internet service is just about a necessity for me [them]"?

Results from the *Spring 1999 Sample Survey of Military Personnel*, conducted by the Army Personnel Survey Office (ari_apso@ari.army.mil).

The Values of New Recruits

Introduction

The senior leadership of the Army realizes the important role values play in the Army. In the past, the Army has collected data on the values of active duty soldiers. However, there is only limited knowledge of the values new recruits bring to the Army or their relationship to the seven core Army values–Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, and Personal Courage–emphasized by the Army leadership. In this study, these core and other values were assessed among entering Army recruits to establish a basis for tracking soldier values from initial entry training through the first tour of duty.

What We Did

ARI developed an experimental self-report, paper-and-pencil survey to assess a broad cross-section of the values of new recruits. The survey includes both traditional response items that measure values toward society, work, and ethics, and simulated value-based behaviors in the form of ethical dilemmas that force respondents to assess the likelihood of their response to a situation. After our analysis of the results, the final version of the survey was shortened by about half so that it could be administered in less than 30 minutes.

Survey Administration. During October and November 1998, a developmental version of the values survey was administered at all six Army Reception Battalions to all new recruits. The six locations included: Fort Leonard Wood, Missouri; Fort Jackson, South Carolina; Fort Benning, Georgia; Fort McClellan, Alabama; Fort Sill, Oklahoma; and Fort Knox, Kentucky. The data includes 8,919 respondents. Since this sample of new recruits looks very much like the population of Army accessions, we feel confident that their values accurately represent the values of all those that have recently joined the Army.

What We Found

Importance of Institutional versus Occupational Influences in a Job. Respondents were asked to rate the importance of each of the following opportunities in a job. A job that: a. gives me a chance to serve my country well; b. is steady; no chance of being laid off; c. gives me a chance to make the world a better place; d. offers good pay; e. offers good fringe benefits. Previous research by Moskos & Wood (1988) showed that these job characteristics can be divided into two components, institutional orientation and occupational orientation. This two component model was also supported by factor analysis of the current sample. Serving country and making the world a better place can be characterized as representing the "institutional" view of military service, while having a steady job and getting good pay and benefits are more typical of the "occupational" viewpoint. These results suggest that, although the institutional reasons are strongly endorsed by about half of the new recruits, the occupational factors play a significantly greater role in evaluating jobs. Having a steady job, being well paid, and receiving good benefits were rated as very/extremely important by two-thirds to three-quarters of respondents.

Importance of Institutional versus Occupational Orientation in the Decision to Enlist. Respondents were asked to rate the importance of similar types of institutional and occupational characteristics, previously discussed, in their decision to enlist in the Army. Overall, the occupational values were somewhat less important in the decision to enlist in the Army as compared to their importance in evaluating jobs in general. However, factors such as pay, job security, and benefits received a stronger endorsement than did the institutional factors.

Reasons for Enlisting. Consistent with the more occupational orientation of new recruits, personal improvement through education (51%), training (35%), and discipline (32%) were the primary motivations active duty recruits gave for enlisting. Pay (21%) and desire to serve country (20%) were fourth and fifth, respectively.

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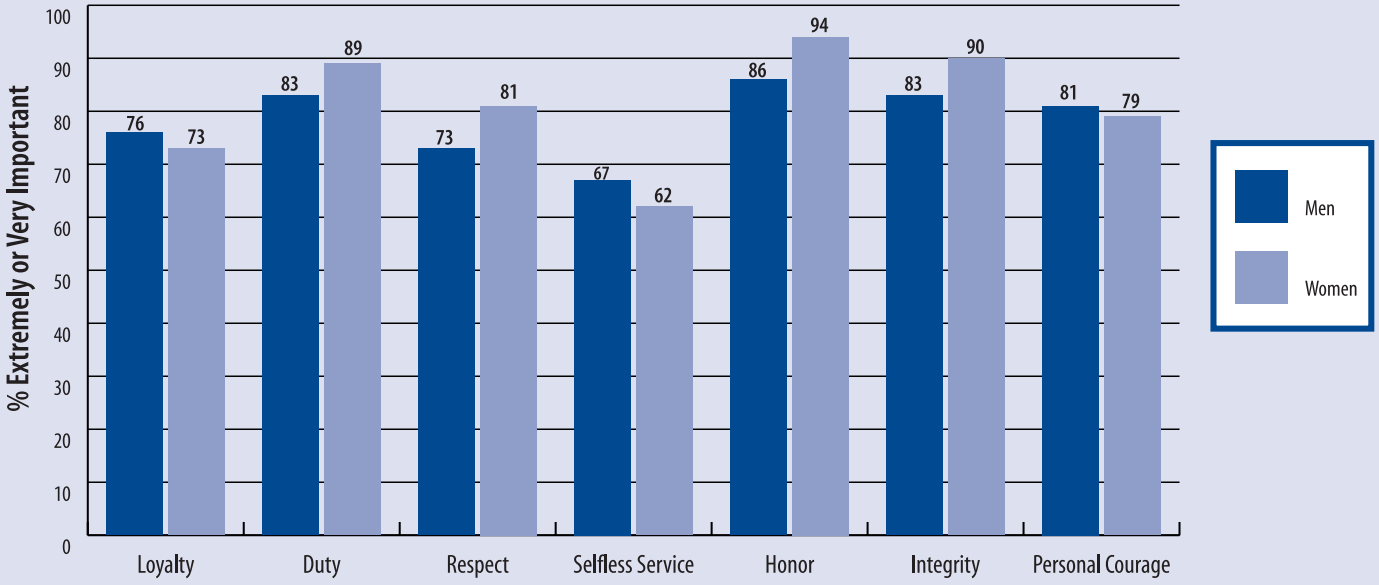
Figure 1
SSMP Army Core Values Scale



The Values of New Recruits

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Contemporary Social and Work Values. Respondents were asked to indicate their level of agreement with statements that reflected their values about social responsibility, commitment, and attitudes toward gender and ethnic diversity. Generally speaking, "social responsibility" as evidenced by concern for environment and making the world a better place received the strongest endorsement from new recruits, with about 60% stating that they agree/strongly agree that they have such responsibility. New recruits exhibited strong openness to working with members of opposite gender (93%) and differing racial/ ethnic groups (91%).

Traditional Values. The Rokeach Values Scale was included in the survey as a more global measure of values that has been used extensively with civilian populations. Overall, there was resounding endorsement of these values which included freedom, self respect, happiness, and family security. These were rated as extremely or very important by 70% or more of the sample.

Sample Survey of Military Personnel (SSMP) Army Core Values. Sixteen personal belief items relating to the perceived importance of the seven Army core values were also included in the survey. Based on the ratings of subject matter experts and Cronbach Alpha reliability analyses, the 16 personal belief items reduced to scales that measured the seven Army core values. Figure 1 shows the percent of the sample that rated each of these seven values as extremely or very important. All of the values were important for new recruits; some were more important than others were. Women were slightly higher on four values: duty, respect, honor, and integrity, than men.

Simulated Value-Based Behaviors. Simulated value-based behaviors were measured by the new recruit's response to an ethical dilemma. In each case, an ethical dilemma is presented in which several courses of action are possible. Some of these have benefits that accrue solely to the primary character, the role assumed by the respondent. In other cases, a course of action may represent the "right thing to

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do," while in still others the options presented suggest a compromise between that which might benefit others and self. For each scenario, four courses of action were presented. The respondent was asked to indicate how likely it is that he/she would take each one (very likely, somewhat likely, somewhat unlikely, very unlikely). Fifteen vignettes were included in the survey. An example of a vignette is shown below:

While walking through the mall, you notice a group of teenagers loudly making fun of a handicapped man nearby. Though he pretends not to hear what they are saying, he is clearly uncomfortable and hurt by their remarks about his handicap. Everyone else seems to be trying to ignore the situation hoping that the teenagers will eventually stop or move on.

How likely is it that you would. . . .	Very Likely	Somewhat Likely	Somewhat Unlikely	Very Unlikely
Approach the teenagers and ask them to stop harassing the handicapped man.	❑	❑	❑	❑
Ignore it like everyone else and hope the teenagers find another target.	❑	❑	❑	❑
Join the teenagers in making fun of the man and his handicap.	❑	❑	❑	❑
Try to find a security guard or other mall personnel to handle the situation.	❑	❑	❑	❑

A factor analysis of the vignettes revealed four different value dimensions, (1) Selfishness, (2) Truthfulness, (3) Helpfulness, and (4) Social Courage. These four dimensions were related to the seven Army core values. As expected, prosocial values such as truthfulness, helpfulness, and social courage were positively related to the Army core values while selfishness was negatively related to them. When social, work, and military values were also related to the vignettes, evidence was obtained that suggest soldiers used their values in responding to the vignettes. For example, those high on helpfulness tended to choose the most helpful behaviors when responding to the vignettes.

The use of vignettes to assess values may provide a better method of assessing values than standard survey items because it makes the correct answer more ambiguous and diminishes the likelihood of socially desirable responses. This approach to assessing values is also being explored by researchers at the US Military Academy, and the TRADOC Training and Analysis Center. TRADOC also uses vignettes to train new recruits on the meaning of Army values.

What This Means : The Values of Today's New Recruits

Overall it can be said that institutional motives of service to country, improving the world, and continuing a tradition of service weigh heavily with today's recruits, having been endorsed as very/extremely important by about half of the sample. However, it is also clear that the "occupational" values such as a steady job and good income were a stronger motivational factor in the enlistment decision. As expected, this result varies by component, with pay and compensation issues being more important to the full-time, active duty soldiers than the Reserve or Guard. The data also suggest that occupational issues such as pay and benefits were of greater importance in the more global evaluation of jobs than they were in the specific evaluation of the Army as an option. That is, a higher percentage of respondents rated the occupational values as very/extremely important in the context of "thinking about the kind of job you would like to have" than did so in regard to the decision to enlist in the Army.

The discussion above is bolstered by the response to the three most important reasons for enlisting. When the primary reason is examined, four of the five most often-cited reasons were consistent across components. Of these, two involved tangible outcomes (education benefits, job training), one is somewhat less tangible (self-discipline), and the last is clearly an institutional value (desire to serve country). Again, the primary motivations for these new recruits enlisting involved compensation and benefits received, but the

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values involving service were significant factors as well.

These findings were also supported by responses to questions on work values. Practical work values (advancement, steady income) were more strongly endorsed than idealistic values, (fair treatment by employer, opportunity to help others). However, respondents were also very open to working with members of opposite gender and different racial/ethnic backgrounds. They also highly endorsed traditional civilian and military values such as freedom and loyalty.

Overall, the institutional as well as the occupational values of new recruits are strong; both in terms of reasons for enlisting in the Army and from a more general perspective. Personal concerns somewhat outweigh more global issues in importance for new recruits; however, there is a strong feeling of social responsibility among this group. Service to country and one's impact on the world at large are of importance to large segments of those entering today's Army.

Data from this survey will be used as the baseline for the Army's new recruit values database.

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Task Knowledges Commonality Analysis Method (TKCAM)

A Method for Assessing the Feasibility of Job Restructuring

What is TKCAM?

TKCAM is an analytical method that can be used to determine the commonality between two or more occupations in terms of the knowledges that jobholders need to perform their jobs. When issues of merging or restructuring occupations occur, TKCAM can be used during early planning stages to assess the feasibility of the proposed re-designs. Using TKCAM, a personnel analyst can identify whether the knowledge requirements for job performance of two jobs are similar or different. If substantially different, a merger will require expanding the training for the new occupation in order to insure jobholders are capable of performing all tasks encompassed previously in two separate occupations. On the other hand, if there is a large overlap in the knowledges required, the occupations may be merged, all other factors being equal. The U.S. Army Research Institute (ARI) has sponsored the development of TKCAM.

How does TKCAM work?

The basic methodology used in TKCAM is "commonality analysis". In the case of TKCAM, the focus is on the knowledge requirements, i.e., what the jobholder needs to know to perform his job.

In TKCAM, a list of knowledges is developed for each occupation under consideration. This is accomplished by panels of subject matter experts who are experienced jobholders. Using these data, knowledge profiles of each occu-

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A Method for Assessing the Feasibility of Job Restructuring

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pation are formulated. These are then systematically compared by the TKCAM analyst to identify which knowledges are commonly required among the occupations being considered for restructuring and which are not.

Where has TKCAM been used?

TKCAM's development was initiated in 1990 to support a study conducted for the U.S. Army Ordnance Center and School to determine whether existing maintenance specialties needed to be restructured to meet requirements of the Battlefield Maintenance System. A second larger study, the Skill Consolidation Study, was performed for the Ordnance Center and School during 1992; recommendations were developed for consolidating 26 existing maintenance specialties into 11. In 1993, TKCAM was used in a test application at the U.S. Army Field Artillery School to determine how to restructure existing fire control MOSs into a new AFATDS operator MOS. In recent years, personnel and training planners at Fort Bliss, Fort Leonard Wood, Fort Lee, Fort Benning, and Fort Sam Houston, among others, have used TKCAM to assess the feasibility of MOS restructurings.

In 1999, the U.S. Army Infantry School and Center used TKCAM to assess the feasibility of merging 30,000 Infantrymen assigned to two different occupational specialties. Major General Carl Ernst, Commanding General of the school stated, "Based on the. . .analytical process using TKCAM, the Infantry is now in position to speak with facts on the question of MOS restructure feasibility."

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Current Publications of Special Interest

urvey Programs: An Outside Look

ARI has been conducting surveys of soldiers for more than 50 years, since the Army survey program was established by Gen. George C. Marshall in 1943. In December of 1997, ARI launched a review of our survey programs. This review had three purposes: to examine ARI's wide range of surveys and methodologies; to determine whether ARI could benefit by adopting some of the methodologies used by other survey organizations and new emerging technologies; and to make recommendations to ensure that ARI's surveys and methodologies continue to be at the leading edge and to remain in line with the best practices of other organizations. We selected The Gallup Organization to carry out this independent audit. Gallup used its internal experts, as well as a panel of internationally renowned outside experts in survey methods, to assess ARI's survey programs.

Information was gathered about ARI's current attitudinal, command climate, and occupational analysis studies by examining survey documentation and speaking with the staff who carry out the studies. Information was also collected about a number of comparable surveys done by the other services, academic survey organizations, and private firms, and the users of the ARI surveys were queried to assess their satisfaction with ARI's services. ARI was found to use sound methods, comparable to those used by other survey organizations; it achieved similar response rates; and ARI customers expressed a high level of satisfaction. Recommendations were made for continuing enhancement of ARI survey programs.

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This review is summarized in ARI Special Report 43, "ARI Survey Programs: An Outside Look", September 1999.

oundations of the After Action Review Process

The U.S. Army has adopted the After Action Review (AAR) as its primary method of providing feedback after unit collective training exercises. The AAR is an interactive discussion in which unit members decide what happened, why it happened, and how to improve or sustain collective performance in future exercises. Other services and organizations outside the military are also beginning to employ the AAR as a feedback tool. This report, ARI Special Report 42 (July 1999), describes the twenty-five year history of AAR research and development and the major behavioral research areas contributing to AAR development and refinement. In addition, this report defines goals for future AAR research.

Staying Sharp: Retention of Military Knowledge and Skills

ARI has been investigating soldiers' retention of skills and knowledge learning during training. How well a soldier remembers what was learned in training influences how well a soldier can later perform a task and determines the frequency with which re-training needs to occur. Understanding the nature of skill retention thus has important implications for both Army training and personnel policy.

This report, ARI Special Report 39 (July 1999), summarizes over 25 years of work on the topic of skill retention. It emphasizes research performed by ARI, but also includes relevant research by the Air Force and Navy and leading academic institutions. Products from ARI research include a model for predicting skill retention, endorsed by TRADOC and applied numerous times, most recently to the "peace support operations" tasks trained to troops deploying to Bosnia. This research has also led to personnel policy changes, such as increasing the window (from 12 months to 24 months following active duty) for the initial recall of soldiers from the Individual Ready Reserve in the event of a mobilization. We plan to continue research on skill retention issues, focusing on the digital skills required for the decentralized, fluid, fast-paced operations of the future.

Infantry Situation Awareness: Papers from the 1998 Infantry Situation Awareness Workshop

This ARI-published book (November 1999) contains papers developed from the Infantry Situation Awareness Workshop (see ARI Newsletter, Volume 8 Number 2), held at Fort Benning, Georgia, 29-30 September 1998. It consists of 16 chapters representing the views of key program participants on Infantry situation awareness (SA) issues. Specifically, five questions were addressed: (1) What are the most critical Infantry SA requirements; (2) what new training techniques and requirements are needed; (3) what pitfalls should the Army try to avoid in its drive to enhance SA; (4) how can SA be measured for Infantry soldiers and teams; and (5) what are the most critical Training, Leader, and Soldier SA research issues that the Army should address in the next five years? These questions were addressed at four levels of echelon: individual combatants and squads; platoons, companies, and battalions; Infantry brigades; and future Infantry teams. Implications for future Infantry SA research and development are discussed.

For additional information or to receive a copy of any of the above publications, contact Dr. David Witter, ARI Research Support Group, DSN 767-0324 or (703) 617-0324 or witter@ari.army.mil.

The Challenge of Digital Training

The Army is depending on soldiers and leaders who are skilled at using computerized systems to achieve the goal of information dominance on the battlefield and to utilize the full power of new equipment. However, initial feedback about computerized battlefield systems indicates that training of digital skills needs improvement. For example, training should address the need for a broader transfer of skills due to frequent equipment and software upgrades, and for efficiently integrating digital skills into the training time available for tactics, techniques, and procedures. In addition, the Army needs to train soldiers to operate as effective parts of real-time, distributed networks. Because of the greatly increasing use of weapons, equipment, and technologies that depend on digital skills, TRADOC asked the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to identify the best principles and methods for such training.

Deciding How to Proceed

Data Collection. To initiate the research mission, scientists from the Advanced Training Methods Research Unit (ATMRU) at ARI in Alexandria, VA conducted interviews with trainers in Army schools, talked with soldiers and commanders in the field, and studied what leaders said in official and unofficial publications. Specifically, the scientists had discussions with senior training personnel at Fort Hood (III Corps) who were working with the 4th ID (M), the First Digital Division. They did extensive interviews with a variety of personnel at the U.S. Army Intelligence Center (USAIC), Fort Huachuca as well as with officers from one of the light infantry brigades at Fort Drum. USAIC is an important site because the intelligence field is, for the most part, already digitized. The 10th Mountain Division at Fort Drum is important, in contrast, because it had only limited digital equipment at the time of the interviews. In addition, ARI interviewed subject matter experts at the Artillery School, Ft. Sill concerning training and skill retention on the digital Advanced Field Artillery Tactical Data System (AFATDS). ARI combined these findings with information from scientists and with results from the research literature to determine the challenge of digital training.

Findings. The findings can be categorized as those that deal with digital skill training and those that deal with broader issues. As an example of the latter, one senior trainer from Fort Hood stated that an important issue is the problem of hybrid systems. Currently, analog and digitally trained personnel are mixed with analog and digital systems. III Corps is becoming all digital, and other units mostly will remain analog. Because of normal personnel transfers among units in the Army, there must be sustainment training for analog and reacquisition training for digital skills so soldiers can move between III Corps and other Army organizations. Even within III Corps, technology modifications can outstrip training. Software changes occur so quickly that training cannot be stabilized and the only affordable training choices are on-the-job training and embedded training. Shortage of on-site, qualified trainers to teach or refresh digital skills is a pervasive problem according to many who contributed to the findings.

The effect of digitization on the operational environment also has a major training impact. For example, how should we train soldiers and leaders who, with digital operations, can be much more removed in space than ever before from each other, the systems they are controlling, and the enemy they are engaging? The clearest aspect of training for digitalization is that there are many different issues including:

- increased complexity of information at all levels
- more decentralized command and control
- compression of planning, coordination, and decision time

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- shifts between traditional analog and digital environments
- lack of confidence and trust in the digital technology and the information it provides
- broader mission responsibilities with differing information and equipment needs

So far, our analysis of the issues reveals four particularly compelling topic areas where research on digital skill training should benefit the Army:

- Frequent upgrades in digital system hardware and software limit learning of skills to mastery levels and place great demands on refresher training.
- The volume of ambiguous data, along with smaller units and novel situations, require methods for training junior and mid-level soldiers to be flexible and adaptive.
- Training time and resource limitations demand that digital procedures and skills be integrated when needed into training of tactics, techniques, and procedures.
- Future operations call for widely dispersed soldiers linked through electronic networks to perform as digital teams with new training demands.

Research on Training Digital Skills

ARI scientists within ATMRU and other research units have been developing an integrated approach to address the most pressing training research needs. ARI's emphasis is on determining the generalized principles and methods for how to train what, where and when.

Currently, efforts support research to address the four topics above. The first three are the subject of ongoing research in ATMRU and a fourth is in its early planning stages. One fundamental topic is determining the characteristics of digital tasks that affect skill retention. The research will identify characteristics to use for determining the expected length of time that a task can go un-practiced before it decays to the point of needing refresher training. The second research topic will identify ways to improve soldier training (holding training time and resources constant) of digital skill proficiency. The research focuses on approaches to handling the volume, complexity, ambiguity, and ubiquity of task-relevant information. This effort is supplemented by a Small Business Innovative Research (SBIR) initiative about training soldiers to better adapt their skills when faced with upgrades in digital equipment and software. A third research topic is to determine whether WEB-based training is an effective delivery medium for training digital procedures and tasks on demand. A fourth topic, being planned, is about how best to train widely dispersed soldiers who must function as a networked team on the digital battlefield. Through these efforts, ARI is addressing major topics for meeting the challenge of digital training.

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